



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,785	06/27/2003	Gerald Enzner	944-003.177	8105
4955	7590	11/15/2005	EXAMINER	
WARE FRESSOLA VAN DER SLUYS & ADOLPHSON, LLP BRADFORD GREEN BUILDING 5 755 MAIN STREET, P O BOX 224 MONROE, CT 06468			BRINEY III, WALTER F	
		ART UNIT		PAPER NUMBER
		2646		
DATE MAILED: 11/15/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/608,785	ENZNER, GERALD
	Examiner Walter F. Briney III	Art Unit 2646

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 24 October 2005.

2a) This action is FINAL.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-9 and 11-23 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) 1-9, 11, 13-19 and 23 is/are allowed.

6) Claim(s) 12 and 20-22 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_

5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_

## DETAILED ACTION

In providing this office action, the examiner is directed by the guidelines set forth in section 706.07(e):

*“...the finality of a rejection may be withdrawn in order to apply a new ground of rejection.”*

The applicant's traverse of the rejection of claim 12 is persuasive. See pages 13 and 14 of the After Final Amendment filed 24 October 2005. However, in light of a newly discovered reference, it is submitted that claim 12 is not allowable. Furthermore, the amendments made after a final rejection on 24 October 2005 are hereby entered.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. **Claims 20-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

**Claims 20-22** are directed towards the method of claim 15. There is insufficient antecedent basis for this limitation in the claim. Specifically, claim 15 is a system claim. For the purposes of this action, it is submitted that claims 20-22 depend on the method of claim 17. Appropriate correction is necessary.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. **Claim 12 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 15 of U.S. Patent No. 6,925,176 (Myllylä et al.). Although the**

**conflicting claims are not identical, they are not patentably distinct from each other because the differences arise from claim 15 of Patent '176 including further limitations than claim 12 of the instant application.**

Specifically, claim 14 of Patent '176 recites, *inter alia*, (1) an echo cancellation system, (2) a microphone, (3) a resulting echo signal, (4) a loudspeaker, (5) an acoustic output, (6) a speech signal, (7) an echo signal which is a component of a microphone signal, (8) a control block means, (9) an echo reduced microphone signal, (10) a further echo reduced microphone signal, (11) a first control signal, (12) an echo canceller, (13) a second control signal, (14) a residual echo suppressor, (15) a third control signal and (16) a residual echo filter.

In comparison, claim 12 of the instant application recites, *inter alia*, (a) an echo cancellation system, (b) a microphone, (c) an echo signal, (d) a loudspeaker, (e) an acoustic output, (f) a voice signal, (g) an echo signal which is a component of a microphone signal, (h) a statistical adaptive-filter controller, (i) an echo reduced microphone signal, (j) a first control signal, (k) an echo canceller module, (l) a second control signal and (m) a postfilter.

It is submitted that elements (1) through (16) of Patent '176 anticipate each element of claim 12 of the instant invention as set forth below: element (1) corresponds to element (a); element (2) corresponds to element (b); element (3) corresponds to element (c); element (4) corresponds to element (d); element (5) corresponds to element (e); element (6) corresponds to element (f); element (7) corresponds to element (g); element (8) corresponds to element (h); element (9) corresponds to element (i); element (11) corresponds to element (j); element (12) corresponds to element (k);

element (13) corresponds to element (l); element (14) corresponds to element (m). Elements (10), (15) and (16) of Patent '176 are unrelated to the instant application, but because only one-way obviousness is required in determining double-patenting when conflicting claims appear in an application and a patent with the same effective filing date, it is sufficient to note that claim 12 uses the transitional phrase "comprising" in defining the echo cancellation system thereof, which means that although the language of claim 12 necessarily includes all those limitations explicitly listed—and anticipated by Patent '176—it may also include elements (10), (15) and (16) of Patent '176.

With respect to the limitations of claim 12 not treated above, it is noted that claim 15 of Patent '176 clearly indicates that the echo canceller operates in the time-domain, the first control signal is provided in the time-domain, the residual echo suppressor operates in the frequency-domain and the second control signal is provided in the frequency-domain. Therefore, claim 15 of Patent '176 makes obvious all limitations of claim 12.

### ***Allowable Subject Matter***

The following is a statement of reasons for the indication of allowable subject matter:

3. **Claims 1-9, 11, 13-19 and 23 are allowed.**

**Claims 1 and 17** have been amended to include the allowable subject matter of claim 15 as presented in the applicant's previous response. As indicated in the Final Rejection filed 26 July 2005, determining a first control signal according to the equation:

$$\mu(k) = |G'|^2 \Phi_{xx}(k) / \Phi_{ee}(k)$$

is neither anticipated nor obvious in view of the cited prior art. Thus, claims 1 and 17 are allowable over the cited prior art.

**Claims 2-9, 11, 13-16, 18 and 19** all depend variously on claims 1 and 17, and are allowable over the cited prior art for at least the same reasons.

**Claim 23** has been newly added. This claim is limited to essentially the same subject matter as claim 1, however, instead of defining the function  $\mu(k)$ , claim 23 defines the function  $|G(k+1)|^2$ . A version of this function is discussed in the previously cited Enzner reference, particularly the function  $\Phi_{BB}$ . However, as this function is not defined by the reference in terms of the first control signal  $\mu(k)$ , the reference's function does not anticipate the function claimed. Thus, claim 23 is allowable over the cited prior art.

4. **Claims 20-22** would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

**Claim 20** is limited to *the method of claim [[15]]17*, and would be allowable over the cited prior art for at least the same reasons.

**Claims 21 and 22** are dependent on claim 20, and would be allowable over the cited prior art for at least the same reasons.

#### ***Response to Arguments***

Applicant's arguments filed 24 October 2005 with respect to the rejection(s) of claim(s) 12 under 35 U.S.C. § 102(b) have been fully considered and are persuasive.

Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of US Patent 6,925,176 (Myllylä et al.).

**With respect to claim 12**, the applicant alleges on pages 13 and 14 of the current response that Capman does not describe the voice signal 20 and the echo reduced microphone signal 34, to which the examiner agrees. In particular, Capman doesn't provide the voice signal  $x(n)$  to any of blocks (32) and (33), which were drawn to the statistical adaptive controller as recited. Thus, the rejection of claim 12 as currently amended is withdrawn.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F. Briney III whose telephone number is 571-272-7513. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



WFB  
11/9/05

**SINH TRAN**  
**SUPERVISORY PATENT EXAMINER**